

IN THE CLAIMS:

Please cancel claims 1-7 without prejudice to or disclaimer of the subject matter recited therein.

LISTING OF CURRENT CLAIMS

Claims 1-7. (Canceled)

Claim 8. (Original) A dual frequency band inverted-F antenna for communicating a low frequency signal and a high frequency signal, comprising:

a substrate;

a ground metal, which is formed on a lower surface of said substrate;

5 a vortical metal structure, which is formed on an upper surface of said substrate, further having a short circuit end and an open circuit end wherein said open circuit end is located within a center of said vortical metal structure;

a short circuit leg, which connects electrically said short circuit end of said vortical metal structure with said ground metal;

10 a feeding leg, which extends along a predetermined direction of said vortical metal structure to couple with a feeding circuit on said substrate; and

a terminal micro strip, which is fabricated on the lower surface of said substrate and connected electrically to said open circuit end through a first conductive aperture;

15 wherein, by increasing an encircling number of said vortical metal structure to generate a coupling effect so that an equivalent wavelength of said high frequency signal becomes longer and thereby a resonance frequency at a lower frequency band and a second frequency is added for communicating at a higher frequency band.

Claim 9. (Original) The dual frequency band inverted-F antenna of claim 8, wherein said ground metal connects electrically to said short circuit leg through a second conductive aperture.

Claim 10. (Original) The dual frequency band inverted-F antenna of claim 8, wherein said terminal micro strip has a function of adjusting a coupled impedance with said feeding circuit.

Claim 11. (Original) The dual frequency band inverted-F antenna of claim 8, wherein said ground metal, said vortical metal structure, said short circuit leg, said feeding leg, and said terminal micro strip are printed circuits located on said substrate.

Claim 12. (Original) The dual frequency band inverted-F antenna of claim 8, wherein the equivalent current path length of said open circuit end and said short circuit end is one quarter of a selected wavelength so as to form an open circuit-short circuit structure.

Claim 13. (Original) The dual frequency band inverted-F antenna of claim 8, wherein said vortical metal structure generates inductance to form internal impedance and thus increases freedom of adjusting input impedance of said dual frequency band inverted-F antenna.